

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Original) A method for selective electrofusion of at least two fusion partners having cell-like membranes, comprising the following steps:
 - A) the fusion partners are brought into contact with each other
 - B) at least one microelectrode is used to provide an electrical field of a strength sufficient to obtain fusion and highly focused on the fusion partners, wherein said at least one microelectrode is positioned by use of a microscope, at least one micropositioner and/or a robotic stereotactic device.
2. (Original) A method according to claim 1, wherein only one microelectrode, sufficiently small to permit the selective fusion of two fusion partners, is used to provide the electrical field in step B.
3. (Original) A method according to claim 1, wherein two microelectrodes, sufficiently small to permit the selective fusion of two fusion partners, are used to provide the electrical field in step B.
4. (Previously Presented) A method according to claim 1, wherein one electrode movably mounted on a microchip is used to provide the electrical field in step B.
5. (Previously Presented) A method according to claim 1, wherein several electrodes movably mounted on a microchip are used to provide the electrical field in step B.
6. (Previously Presented) A method according to claim 4, wherein one electrode(s) is (are) movably mounted on a microchip of a suitable design for combinatorial synthesis of fusion products.

7. (Previously Presented) A method according to claim 2, wherein at least one microelectrode is hollow, and sufficiently small to permit the selective fusion of two fusion partners.

8. (Previously Presented) A method according to claim 2, wherein at least one microelectrode that is hollow, electrolyte-filled, and sufficiently small to permit the selective fusion of two fusion partners, is used to provide the electrical field in step B, and said microelectrode is also used to deliver fusion partners or chemical agents by electroendoosmosis, electrophoresis, or by Poiseuille flow.

9. (Previously Presented) A method according to claim 2, wherein the outer diameter of said electrode(s) is sufficiently small to permit the selective fusion of said at least two fusion partners without affecting nearby structures, such as cells, liposomes, and proteoliposomes.

10. (Original) A method according to claim 9, wherein the outer diameter of said electrode(s) is 1-100 μm .

11. (Previously Presented) A method according to claim 2, wherein at least one electrode is used, for delivery of at least one fusion partner to the fusion site.

12. (Previously Presented) A method according to claim 2, wherein step A is performed by use of the electrodes.

13. (Previously Presented) A method according to claim 1, wherein step A is performed by use of optical trapping.

14. (Previously Presented) A method according to claim 1, wherein step A is performed by use of micropipettes.

15. (Previously Presented) A method according to claim 1, wherein at least one of the fusion partners is a cell, and the other fusion partner(s) independently is (are) selected from the group consisting of a single cell, a liposome, a proteoliposome, a synthetic vesicle, an egg cell, an enucleated egg cell, a sperm cell at any development stage and a plant protoplast.

16. (Previously Presented) A method according to claim 1, wherein at least one of the fusion partners is constituted by a multiple of a structure selected from the group consisting of a single cell, a liposome, a proteoliposome, a synthetic vesicle, an egg cell, an enucleated egg cell, a sperm cell at any development stage and a plant protoplast.

17. (Previously Presented) A method according to claim 1, wherein the fusion partners are provided in a buffer prior to step B.

18. (Previously Presented) A method according to claim 1, wherein at least one of the fusion partners has been immobilized prior to step A.

19. (Previously Presented) A method according to claim 1, wherein one of the fusion partners is part of a cellular network.

20. (Previously Presented) A method according to claim 1, wherein at least one of the fusion partners has been electroporated in a buffer prior to step A.

21. (Previously Presented) A method according to claim 1, wherein at least one of the fusion partners has been exposed to a dielectrophoretic field in a buffer prior to step A.

22. (Previously Presented) A method according to claim 1, wherein at least one of the fusion partners has been treated by a fusogenic or other agent that promotes close cell-cell contacts.

23. (Previously Presented) A method for conducting in vitro-fertilization comprising using the method according to claim 1.

24. (Previously Presented) A method for conducting cloning, excluding human cloning, comprising using the method according to claim 1.

25. (Previously Presented) A method for creation of hybridomas comprising using the method according to claim 1.

26. (Previously Presented) A method for manipulation of the composition of a cellular membrane comprising using the method according to claim 1.

27. (Previously Presented) A method for the delivery of a well-defined volume of a substance to a cell comprising using the method according to claim 1.

28. (Previously Presented) A method for the delivery of a pharmaceutically active substance to a cell comprising using the method according to claim 1.

29. (Previously Presented) A method for the treatment of a tumor comprising using the method according to claim 1.

30. (Currently Amended) A method for the treatment of chronic neurodegenerative diseases comprising using the method according to claim 1, whereby one or more of drugs, genes, proteins, DNA or RNA is administered to a subject.

31. (Previously Presented) A method according to claim 2, wherein one electrode movably mounted on a microchip is used to provide the electrical field in step B.

32. (Previously Presented) A method according to claim 3, wherein several electrodes movably mounted on a microchip are used to provide the electrical field in step B.

33. (Previously Presented) A method according to claim 5, wherein one electrode(s) is (are) movably mounted on a microchip of a suitable design for combinatorial synthesis of fusion products.

34. (Currently Amended) The method of claim 30, wherein the neurodegenerative disease is selected from one or more of Parkinson's disease and Alzheimer's disease, whereby one or more of drugs, genes, proteins, DNA or RNA is administered to a subject.